

Notice of Allowability

Application No.

10/706,842

Applicant(s)

ANDRY ET AL.

Examiner

Art Unit

Sow-Fun Hon

1772

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed 8/01/07.
2. ☒ The allowed claim(s) is/are 31,33 and 34 renumbered 22, 24-25 in accordance with 37 CFR 1.126.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 08/06/07.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☒ Other See Continuation Sheet.

Continuation of Attachment(s) 9. Other: The drawings filed 11/12/03 are accepted by the examiner.

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Frank DeRosa on August 6, 2007.

The application has been amended as follows:

2. In accordance with 37 CFR 1.126, claims 31, 33-34 are renumbered as 22, 24-25 because although the preliminary amendment filed 11/12/2003 listed claims 1-14 as being cancelled, and the subsequent amendments reflected that in the numbering of subsequent new claims, the original set of claims, also filed 11/12/2003, only contained claims 1-5.

3. Specification: Page 1, below the title "TILTED VERTICAL ALIGNMENT OF LIQUID CRYSTALS EMPLOYING INORGANIC THIN FILM COMPOSITION AND ION BEAM TREATMENT", Insert:

- - Cross-Reference to Related Application

This application is a divisional of Application Serial No. 09/877,803 filed on June 7, 2001, now US Patent 6,660,341, the disclosure of which in its entirety is incorporated by reference herein. - -

4. Amend claim 34, renumbered 25 in accordance with 37 CFR 1.126:

Rewrite line 10 as: - - 0 to ~~about~~ 1 degree by adjusting y and z. - -

Reasons for Allowance

5. Claims 31, 33 and 34, renumbered 22, 24-25 in accordance with 37 CFR 1.126, are allowed.

6. The following is an examiner's statement of reasons for allowance.

Regarding claims 31 and 33, renumbered 22, 24 in accordance with 37 CFR 1.126, the closest cited prior art of record, US 6,061,115, fails to teach or suggest, a liquid crystal display device, comprising: a non-rubbed SiC_x alignment layer, comprising constituent silicon and carbon materials; and liquid crystal material disposed in contact with the non-rubbed SiC_x alignment layer, wherein the non-rubbed SiC_x alignment layer imparts a pretilt angle in a range of about 4 to about 5 degrees when x is set to about 2, or a pretilt angle in a range of about 0.5 to about 1 degree when x is set to about 1.5. The reference does not have sufficient specificity and fails to provide motivation to set x to about 2 to impart a pretilt angle in the range of about 4 to about 5 degrees; or to set x to about 1.5 to impart a pretilt angle in the range of about 0.5 to about 1 degree.

Regarding claim 34, renumbered 25 in accordance with 37 CFR 1.126, the closest cited prior art of record, US 6,061,115, fails to teach or suggest, even in view of US 5,011,268, a liquid crystal display device, comprising: a non-rubbed SiO_yN_z alignment layer, comprising constituent silicon, oxygen and nitrogen materials; and liquid crystal material disposed in contact with the non-rubbed SiO_yN_z alignment layer,

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wherein the non-rubbed SiO_yN_z alignment layer imparts a pretilt angle in a range of about 0 to 1 degree by adjusting y and z. The combination of references do not have sufficient specificity and fail to provide motivation to set the pretilt angle in a range of about 0 to 1 degree. '268, which compensates for the failure of '115 to teach the SiO_yN_z alignment layer, teaches that the tilt angle of an alignment layer in a liquid crystal display should be between 1 and 5 to provide a suitable response time and to optimize the viewability of the device (column 1, lines 40-55), thus teaching against the desirability of a range of about 0 to 1 degree. Furthermore, '268, by itself, teaches that glow discharge techniques deposit porous inorganic materials which can be rubbed to achieve the desired alignment, where inorganic materials were not previously used as alignment layers because they could not be rubbed (column 3, lines 25-37), thus teaching against a non-rubbed SiO_yN_z alignment layer.

There are no double-patenting issues over the divisional parent application serial number 09/877,803, now US Patent 6,660,341, due to the restriction requirement by the Office dated 06/13/03, which restricted out the product claims.

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Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication should be directed to Sow-Fun Hon whose telephone number is (571)272-1492. The examiner can normally be reached Monday to Friday from 10:00 AM to 6:00 PM.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye, can be reached at (571)272-3186. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

S. Hon

Sow-Fun Hon

08/06/07


RENA DYE
SUPERVISORY PATENT EXAMINER
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